

It differs materially from any of the vast numbers of *Helices* now known to conchologists, especially in the different character of the upper and lower parts of the shell. The upper portion of the whorls has a rough rusty surface encircled by numerous finely beaded lines and keels; the lower surface is smooth and shining, jet-black, encircled by a distinct yellow band.—*Proc. Zool. Soc.* Feb. 24, 1852.

On the Colours of Plants. By M. MARTENS.

At the close of a long memoir on this subject, the author gives the following summary of his results:—

1. The only two fundamental or primitive colours in plants are blue and yellow, or in other words *anthocyane* and *anthoxanthine*.

2. These primitive colouring matters are formed under the vital influence, not only in the petaloid, but also in the herbaceous portions; in the latter they are most frequently associated together and with other organic matters, thus forming the insoluble green *chlorophylle*.

3. Chlorophylle always has a tendency to become yellow in plants in consequence of the great alterability of the blue colouring principle, unless the latter has been rendered more stable by union with an acid which reddens it. In this case the leaf, instead of acquiring a yellow colour by the alteration of the chlorophylle, becomes red.

4. The red colour of leaves is not always the result of the presence of an acid, whether by the action of this upon the blue or upon the yellow colouring principle of the leaves. The red matter of the leaves, the so-called *erythrophylle*, may also arise from the oxygenation of the yellow principle or *xanthophylle*.

5. The blue and yellow colouring matters, especially the former, being often, when isolated, in a liquid state, must be carried in this case by aqueous transpiration towards the surface of the plant, by which means they must become deeper in colour, or more concentrated, in the cells which lie immediately under the epidermis, where they are constantly met with, and where they may also be subjected to the action of oxygen.

6. Although the coloured juices usually exist in the most superficial layers of cells, in which the chlorophylle is scanty, they may nevertheless arrive there from more internal cells by the action of endosmose and exosmose.

7. In proportion as the blue, yellow or red colouring juices appear in the cells of the herbaceous parts, the quantity of chlorophylle diminishes; it may even disappear entirely when the petaloid coloration becomes very intense, as in the red cabbage.

8. Chlorophylle, being capable by its decomposition of giving rise to blue and yellow matters, may assist indirectly in the formation of the colours of flowers as well as of coloured leaves.

9. The colours of flowers can only change according to the variations of which the blue and yellow are capable. Now blue is able to pass to red by means of acids, and also to present all the colours

resulting from the mixture of blue and red, whence is obtained a series of shades or colours, called the *cyanic series*.

10. The yellow colouring matter being capable of reddening by oxygenation, and also by acids (as in the yellowish juice of some cells of the leaves of red cabbage), yellow flowers may pass to red, and also present all the shades intervening between these colours; these colours constitute the *xanthic series*.

11. The red colour of the two series is far from being the same, not only as to its origin, but also as to the variations of tint which it may undergo. That of the *xanthic series* is less common in leaves than in flowers. The contrary is the rule for the red of the *cyanic series*.

12. The two kinds of red, like the two fundamental colours, are sometimes united in the same flower, which may then present every imaginable variety of colour. — *Bulletins de l'Acad. Royale de Bruxelles*, xx. pt. 1. p. 232.

METEOROLOGICAL OBSERVATIONS FOR FEB. 1854.

Chiswick.—February 1. Cloudy: rain. 2. Overcast: clear, with bright sun: frosty. 3. Frosty: dense fog. 4. Frosty: very fine: overcast. 5. Clear: cloudy. 6. Fine. 7. Cloudy: clear at night. 8. Clear: cold and dry: overcast. 9. Cloudy: rain. 10. Clear and frosty: cloudy and cold: clear. 11. Cloudy and fine: hazy. 12. Foggy: clear and fine. 13. Frosty: cold and dry: clear, with sharp frost at night. 14. Sharp frost: fine. 15. Overcast. 16. Cloudy: clear: overcast. 17. Cloudy. 18. Drifting snow: clear and cold: boisterous at night. 19. Clear and cold. 20. Overcast. 21. Clear and fine. 22. Fine: cloudy. 23. Clear. 24. Cloudy. 25, 26. Very clear. 27. Uniformly overcast: clear: overcast. 28. Fine.

Mean temperature of the month	37°·67
Mean temperature of February 1853	32·53
Mean temperature of Feb. for the last twenty-eight years ...	39·13
Average amount of rain in Feb.	1·57 inch.

Boston.—Feb. 1. Cloudy. 2—4. Fine. 5—9. Cloudy. 10. Fine: snow A.M. 11. Cloudy. 12. Fine. 13. Cloudy. 14. Fine. 15, 16. Cloudy. 17. Cloudy: rain P.M. 18. Cloudy: stormy. 19. Fine. 20. Cloudy: rain A.M. and P.M. 21. Fine. 22. Fine: rain P.M. 23—26. Fine. 27, 28. Cloudy.

Sandwick Manse, Orkney.—Feb. 1. Showers A.M.: clear P.M. 2. Showers A.M. and P.M. 3. Cloudy A.M.: cloudy, aurora P.M. 4. Cloudy A.M. and P.M. 5. Sleet-showers A.M.: showers P.M. 6. Showers A.M. and P.M. 7. Sleet-showers A.M.: hail-showers P.M. 8. Hail-showers A.M. and P.M. 9. Snow-showers A.M.: clear P.M. 10. Cloudy A.M. and P.M. 11. Drizzle A.M.: cloudy P.M. 12. Cloudy A.M. and P.M. 13, 14. Drizzle A.M. and P.M. 15. Hail-showers A.M. and P.M. 16. Drizzle A.M. and P.M. 17. Snow-showers A.M. and P.M. 18. Snow-showers A.M.: hail-showers P.M. 19. Cloudy A.M. and P.M. 20. Showers A.M.: clear P.M. 21. Bright A.M.: cloudy P.M. 22. Drizzle A.M.: showers P.M. 23. Snow-showers A.M.: hail-showers P.M. 24. Showers A.M.: showers, aurora P.M. 25. Showers A.M.: aurora P.M. 26. Cloudy A.M. and P.M. 27. Rain A.M. and P.M. 28. Sleet-showers A.M.: showers P.M.

Mean temperature of Feb. for twenty-seven previous years ...	38°·20
Mean temperature of this month	39·20
Mean temperature of Feb. 1853	33·74
Average quantity of rain in Feb. for thirteen previous years...	3·33 inches.